

## PATENT SPECIFICATION



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## COMPLETE SPECIFICATION.

An Improved Composition for Removing Rust from, and  
Cleansing, Steel and Iron.

We, HEINRICH SIEGEL, of Markgrafen-  
strasse 33, Berlin, W., Germany, of Ger-  
man nationality, and ERICH PODDER, of  
Sangerstrasse 6, Reval, Esthonia, of  
Esthonian nationality, do hereby declare  
the nature of this invention and in what  
manner the same is to be performed, to  
be particularly described and ascertained  
in and by the following statement:—

Petroleum and benzene have been used  
heretofore, either individually or as a  
mixture, for removing rust from, and  
cleansing, steel and iron parts of  
machines, motors, automobiles, tools and  
the like. The present high price of these  
agents, however, practically prohibits  
their use. In addition to these, so-called  
chemical rust-removing agents are also  
known which, however, apart even from  
their high price, have the objectionable  
property that they adhere firmly to the  
skin of the operator. For this reason the  
hands, when working with these known  
chemical rust-removers, must be pro-  
tected by leather gloves. Also the storage  
of the known rust-removers and  
cleaners requires particular precautionary  
measures as they easily eat through and  
destroy the usual containers and vessels.  
Rust removal and cleansing by the  
employment of heavy oils is also known,  
while for cleansing and disinfecting pur-  
poses, a mixture of sodium carbonate and  
potassium permanganate has been pro-  
posed.

The present invention relates to the  
manufacture of rust-removing agents  
which, with a slight alteration in their  
composition, may be used equally well as  
cleansers. The constituents used in  
carrying out the manufacture are cheaper  
than those heretofore used and do not  
affect the operator, neither do they affect  
the article being treated more than is  
absolutely necessary for the removal of  
the rust and dirt. It is to be particu-

(Price 1/-)

larly noted that the storage and employ-  
ment of the material, which is also fire-  
proof, is simple and convenient by reason  
of its crystalline condition.

The rust remover, as made under this  
invention, consists of a mixture of  
caustic soda, soda crystals and potassium  
manganate or potassium permanganate.  
The chemicals are mixed together and  
kept in a dry state until required for use  
when they are mixed with water where-  
upon a chemical reaction is set up which  
produces a liquid capable of easily and  
quickly removing rust.

The following proportions, which have  
been found in practice to be very effective  
for removing rust, are given by way of  
example:—

750 gms. caustic soda,  
375 gms. soda crystals,  
10 gms. potassium manganate or  
potassium permanganate.  
12 litres water.

Small articles from which rust is to be  
removed, are dipped into the solution  
and after several minutes soaking are  
rubbed over with a rag. Larger articles  
are brushed over with the solution, i.e.  
they are covered with a film or layer of  
the solution and are then, after some  
minutes soaking, rubbed over with a rag  
in the same manner.

If it is desired to cleanse whole  
machines, machine parts or other steel or  
iron articles, from dirt, oil, colours, or  
smoke, the composition of the solution is  
altered slightly by the addition of a small  
proportion of glycerine which may be  
introduced into the liquid but is prefer-  
ably added to the dry crystals. The rust-  
removing properties of the mixture  
remain unchanged even with this  
addition.

For cleansing, that is, when the  
removal of rust is less essential than the

cleansing itself, the following proportions, which are given by way of example, are found to be effective in practice:—

- 5  $\frac{1}{4}$  kg. caustic soda,  
 $\frac{1}{4}$  kg. soda crystals,  
 $\frac{1}{8}$  kg. glycerine,  
 16 gms. potassium manganate or potassium permanganate,  
 120 litres water.

- 10 The glycerine on account of its relatively small quantity, is absorbed by the other crystalline materials and is not particularly noticeable when the composition is dissolved in hot water. The cleansing  
 15 composition dissolves easily in warm or hot water which may be added, as indicated by the foregoing example, in large quantities, the articles to be cleansed being dipped into or washed in the solution.  
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- Although definite proportions of water are given above, the powerful combination of crystals may be dissolved to any  
 25 desired amount in warm water, the article to be operated on being brushed over with, or dipped into the solution. After a few minutes, the rust present is loosened without any injury whatsoever to the underlying skin or surface of the  
 30 iron or steel body. The article is then simply mopped with a rag and, in consequence, retains a thin protecting film of the liquid which ensures protection against renewal of the rust for several  
 35 weeks.

Both the above mentioned compositions are absolutely harmless to the operator

and to the article being cleansed; they are convenient to store in dry form; are cheaper to manufacture than the heretofore known rust-removing and cleansing agents; and it has been found that they are far superior in effect.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A composition for removing rust from steel and iron consisting of caustic soda, soda crystals, potassium manganate or potassium permanganate, and water.

2. A composition for removing rust from, and also cleansing steel and iron consisting of caustic soda, soda crystals, potassium manganate or potassium permanganate and water, with the addition of glycerine.

3. A composition for removing rust from steel and iron as claimed in Claim 1, the ingredients being mixed together substantially in the proportions hereinbefore set forth.

4. A composition for removing rust from, and also cleansing steel and iron as claimed in Claim 2, the ingredients being mixed together substantially in the proportions hereinbefore set forth.

Dated the 29th day of October, 1923.

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